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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,253	04/10/2001	Yu-Ro Lee	A34201	9475

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EXAMINER	
MERED, HABTE	

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/832,253	Applicant(s) LEE ET AL.	
	Examiner Habte Mered	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-4,6-18 and 23-25 is/are rejected.

7)☐ Claim(s) 5,6,15,16,19-22 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 10 April 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 11/01/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to because the applicant's invention shown in Figure 5A has an incoherent decision block (block 503). Both outputs of block 503 lead to the same conclusion showing the need to change the decision criteria in block 503. Further, it is not clear at all by what the applicant meant by "traffic data" and "ARQ" in block 503 and the word "extract" in block 505. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

3. In the section, Field Of Invention, Page 4 (Paragraph 22) has labels quoted from Figure 2 but not consistent with labels in Figure 2. That is Iur and Iub should be replaced with Iur and Iub. Further the label Uu is not shown in Figure 2. These labels should be corrected wherever they are mentioned in the specification to be consistent with Figures 1 & 2.

4. In the section, Detailed Description Of The Preferred Embodiments, Page 22 (Paragraph 108), the use of the acronym "TFI" needs to be expanded and further explained.

5. In Table 1, for signal 403, the data and information value is TFI but should be TFI1 and TFI2 to be consistent with Figures 4A and 4B. Also in Table 1, for signal 405, values of 401 and 402 need to be replaced by 403 and 404 in order to be consistent with Figures 4A and 4B.

6. Paragraph 100, Page 21 when talking about Figure 5A the distinction between traffic data and data suitable to ARQ form is not at all clear. Further when side information is extracted from the received data, it is not clear what is the impact of the extraction on the received data.

7. Paragraph 113, Page 23 describes Figure 6A but does not at all describe what steps the UE will take in the case when the stored data in the Layer 1 buffer is not identical to the signal sent by the upper layer (RRC) where the comparison is based on the side information.

Appropriate correction is required.

Claim Objections

8. Claims 1, 2, 23 and 24 are objected to because of the following informalities: In order to make the claims clear, need to add the preposition "for" at the beginning of the following two phrases: "converting a common channel part" and "converting a dedicated user part". After the changes are made the phrases should read as follows: "for converting a common channel part" and "for converting a dedicated user part".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6-18 and 23-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson et al (US 6,643, 813), hereafter Johansson, and further in view of 3GPP Technical Specification (3G TS 25.301 V3.3.0 (2000-3)).

9. Regarding **claims 1-4, 7-14, 17, 18** and **23-25**, Johansson discloses data processing method in a wideband radio communications system such as a WCDMA system. Johansson further discloses the WCDMA radio communication system utilizes ARQ technique in general. The hybrid ARQ type II/III is one type of well-known prior art ARQ technique in data telecommunication. *See Column 2 lines 21-26 and Column 5 line 22.*

Johansson shows the Radio Interface Protocol in Figure 4. The Radio Interface Protocol is applicable to both the mobile station and the UTRAN (Universal Terrestrial Radio Access Network). *See Column 4 lines 46-55.*

Johansson shows that the RLC Layer creates an RLC Protocol Data Unit (PDU) from data received from the upper layer (i.e. Network Layer). Johansson shows the RLC PDU in Figure 5 A. The RLC PDU can contain user and/or control data. Johansson further shows that the control data can contain sequence number, extension indicator, length indicator, etc... Further more, Johansson shows that the RLC layer can generate data PDU as well as control PDU. The RLC PDU is forwarded to the MAC Layer. *See Column 5 lines 6-13, lines 22-36.*

Johansson discloses that the MAC in general selects an appropriate transport format and formats the RLC PDU and forwards it to a physical channel through a transport channel. *See Column 5 lines 1-6.*

Johansson also discloses that the Physical Layer receives the data and control information forwarded from the MAC Layer via the transport channels and converts it to a radio transmission format using various techniques such as modulation and RF processing and provides information transfer services over the radio interfaces shown in Figure 4. The physical channel multiplexes all of the transport channels and transmits the data over the radio interface to a mobile station or user equipment. *See Column 4 lines 56-65 and Column 6 lines 18-22.*

Johansson shows in Figure 3 a block diagram of WCDMA communication system that can adequately support both asynchronous and synchronous transmissions. *See Column 4 lines 11- 45.*

Johansson in Figure 6 describes data transmission in a UMTS entity between a mobile station as the receiver and the RNC as the transmitter. The mobile station forwards the received PDU from the Physical Layer to the RLC Layer through the MAC Layer. The received PDU is first stored in a receive buffer of block 96 and then detected and analyzed in block 94 and using any type of error detecting (ARQ type I or II or III or any similar scheme) method. If the error detection in block 94 indicates error then re-transmission is requested. This process will be repeated until the receiver receives an error free PDU. *See Column 5 lines 58 –65 and Column 6 lines 35 – 65.*

Johansson does not adequately teach the different compositions of the MAC Layer. Johansson does not teach explicitly that the MAC layer is composed of the Dedicated MAC (MAC-d) and Common MAC (MAC-c/sh). Johansson does not

explicitly differentiate between the different types of logical channels used by the MAC Layer. Johansson does not show the exact mapping between logical channels and transport channels.

"3G TS 25.301 V3.3.0 (2000-3)" teaches the following concept about the MAC Layer. The MAC layer provides data services on logical channels. The MAC layer uses two types of logical channels, namely control and traffic, and are strictly distinguished by the type of data transferred. Dedicated Control Channel (DCCH) is a logical channel used to transfer control information. Dedicated Traffic Channel (DTCH) is a logical channel used to transfer user information. Also the DCCH and DTCH can be connected to DCH transport channels. *See Section 5.3.1.1.1, Page 15 and Section 5.3.1.1.2, Pages 16 and 17.*

"3G TS 25.301 V3.3.0 (2000-3)" further shows in Figure 16 that the MAC layer is composed of two entities, namely the MAC-d (Dedicated MAC) and the MAC-c/sh (Common MAC). Figure 16 of "3G TS 25.301 V3.3.0 (2000-3)" clearly shows that the MAC-d and MAC-c/sh can be on different radio networks. Further it shows UTRAN consists of a set of Radio Network Subsystems (RNSs) connected to a core network. Since the Controlling RNC and the Serving RNC can be separate RNCs, for a given user its MAC-d can be located in the serving RNC and use the MAC-c/sh of the

controlling RNC enabling a single user to utilize an arrangement of different MAC entities on different radio networks. *See Section 5.6.5.3, Page 34.*

It would have been obvious to one having ordinary skill in the art at the same time the invention was made to modify Johansson's method of data communication to be compliant with telecommunications standard bodies such as that of 3GPP, in order to make the method inter-operable in multi-platforms such as W-CDMA, TD-CDMA, GSM, etc...

Allowable Subject Matter

Claims 5, 6, 15, 16, 19-22 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 5, 6, 19 – 22 the cited references taken individually or in combination fail to particularly disclose that the receiver, after demultiplexing or separating the Control and Data PDUs sent by the transmitter, uses a Control PDU which is a copy of the side information contained in the Data PDU to process the Data PDU. If the Control PDU matches the side information contained in the Data PDU then the Data PDU is forwarded to the higher protocol layers for further error checking and processing after performing ARQ type II/III combinations (if necessary) at Layer 1.

Regarding claims 15 and 16 the cited references taken individually or in combination fail to particularly disclose that the transmitter at the RLC layer creates a Control PDU for every Data PDU and the Control PDU contains all the side information contained in the Data PDU when acknowledged mode of communication and hybrid ARQ type II/III error detecting mechanism is used.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patent is cited to show the state of the art with respect to Hybrid ARQ method for packet data transmission:

US Patent (6, 658, 005) to Seidel et al

Nuno T. Almeida & Silvio A. Abrantes, A Novel Approach to ARQ Error Control Mechanisms for Wireless LANs Communications, 11/2000, IEEE

The following patent is cited to show the state of the art with wireless multiple data services:

US Patent (6, 363, 058) to Roobol et al

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HM

RICKY NGO
PRIMARY EXAMINER
11/15/04